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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,666	03/31/2001	Brett Torre Crawley	5400-002	8539

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EXAMINER

PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,666

Applicant(s)

CRAWLEY ET AL.

Examiner

Hai C Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 27-54 and 62-75 is/are rejected.
- 7) ☒ Claim(s) 20-26, 55-61, 76 and 77 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 27 and 28 are objected to because of the following informalities:

- Claim 27:
- "said product indicator comprises" should read --said product indication signal is generated by-- since the product indicator lacks antecedent basis.
- Claim 28:
- "said product indicator" should read --said product indication signal-- since the product indicator lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 30:
- Claim 30 is not clear and the condition of the laser beam signal is unknown since the sentence "if said laser beam signal ..." is left incomplete.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 6, 10, 27, 32, 37, 41, 64, 65 are rejected under 35 U.S.C. 102(b) as being anticipated by Fossey et al. (5,361, 268).

Fossey et al. discloses a laser machining device comprising a laser detection device that is responsive to a product indication signal (product information detecting signal 209, Fig. 11) to determine if a laser has emitted a laser beam towards a product, that comprises a laser beam detector (detector 268) that generates a laser beam detection signal (270) in response to the laser emitting the laser beam, a controller (control unit 228) that accepts as inputs the product indication signal and said laser beam detection signal, and said controller configured to determine whether the laser emitted the laser beam in proper relation to the product indication signal.

Fossey et al. further teaches:

- the laser beam detector comprising optical emitter (laser source) and detector (268),
- the laser beam detector being an optical detector,
- the product indicator sensor () being capable of physically detecting the product,

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- the laser beam detection signal indicating an attenuation of the laser beam (the power of the laser beam being monitored).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 13, 15-19, 28-29, 31-32, 44, 46-50, 52-54, 62-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liska (U.S. 5,629,484) in view of Fossey et al.

Liska discloses a method and apparatus for monitoring a laser ablation operation involving multiple ablation sites on a workpiece, the apparatus including a laser detection system that is responsive to a product indication signal to determine if a laser has emitted a laser beam towards a product, that comprises a product indicator (proximity sensor 31) that produces and causes the laser (25) to emit the laser beam (26) onto the product (semiconductor chip 22), a microphone (101) for indicating a laser ablation of the product every time the laser emits a laser beam, a controller (computer, not shown) that accepts as inputs the product indication signal and said laser beam detection signal, and said controller configured to determine whether the laser emitted the laser beam in proper relation to the product indication signal.

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Liska teaches the use of an acoustic sensor for detecting the proper action of the laser in inscribing marks on the product, and thus fails to teach the detection of the laser beam.

However, Fossey et al. discloses a laser-machining device provided with a product information detector (207) and a laser beam detector (detector 268) to determine whether the laser emitted the laser beam in proper relation to the product indication signal.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the laser beam detector as taught by Fossey et al. in the device of Liska. The motivation for doing so would have been to provide a direct detection of the emission of the laser source as well as to allow direct laser power detection.

Liska further teaches:

- the laser beam detector is comprised of a sonic emitter and detector (dynamic microphone),.
- the controller generating an error output signal if the laser beam was not emitted in proper relation to the product indication signal (which would shut down the conveyor system),
- the error output signal is optically isolated from said inputs to said controller,
- the controller comprising a counter (105) that is responsive to the product indication signal to count the number of products likely marked by said laser beam (col. 2, lines 34-51),

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- the counter is coupled to the clock of a flip-flop, and wherein the product indication signal increments said counter and said laser beam detection signal resets said flip-flop, and wherein said flip-flop generates said error output signal if said flip-flop changes state (col. 2, lines 52-67),
- the product indicator comprises a signal indicative of the movement speed of the products,
- the product indicator is a clock signal generated in relation to the speed of movement of said products.

On the other hand, although Liska does not disclose the flip-flop being of J-K and R-S flip-flops, it is however old in the art that most counters are currently and preferably made of J-K and R-S flip-flops, such that they are inherently parts of Liska's disclosed flip-flops.

8. Claims 2-5, 11-12, 33-36, 42-43, 66-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liska in view of Fossey et al., as applied to claims 1 above, and further in view of Sanderson et al. (U.S. 5,923,029).

Liska in view of Fossey et al., discloses all the basic limitations of the claimed invention except for the thermal-type sensors for detecting the laser beams.

However, it is well known in the art that a variety of optical radiation sensors have been used to detect the laser beam such as thermal sensor, thermal switch, optical emitter-detector in the infrared spectrum, as evidenced by Sanderson et al., which teaches pyro-electric detectors for detecting the presence of laser beams based on the

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thermal absorption of the optical radiation to produce electric signal, the emitter being IR radiation.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate thermal detector as taught by Sanderson et al. in the modified device of Liska. The motivation for doing so would have been to provide a cheap but robust and reliable detector, which can rapidly detect the presence of the laser beam as suggested by Sanderson et al. at col. 1, lines 25-31.

9. Claims 6-9, 14, 37-40, 45, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liska in view of Fossey et al., as applied to claim 1 above, and further in view of Watanabe et al. (U.S. 5,520,062).

Liska in view of Fossey et al., discloses all the basic limitations of the claimed invention except for the optical emitter/detector working in the infrared spectrum, and the transparent window, the optically isolated controller.

However, Watanabe et al. discloses the use of an infrared sensor being used to detect a laser beam in a laser beam machining device, which is provided with a transparent window through which the infrared beam is projected and received by the sensor such that the sensor is protected from spatters or fumes generated during the operation of the machining device.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include the infrared sensor along with the enclosure having a transparent window as taught by Watanabe et al in the modified device of

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Liska. The motivation for doing so would have been to protect the laser beam detector from the influence of spatters or fumes as suggested by Watanabe et al.

Allowable Subject Matter

10. Claims 20-26, 55-61, 76-77 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of the allowability of the claimed invention, with respect to claims 20-26, 55-61, 76, is the inclusion of the limitation, in the combination as currently claimed, that the laser beam detection system includes a second counter responsive to the laser beam detection system such when the count difference between the first and second counters is higher than a threshold number an error output signal will be generated. The combined limitations are not found taught or fairly suggested by the prior arts made of record, considered alone or in combination.

The primary reason for the indication of the allowability of the claimed invention, with respect to claim 77, is the inclusion of the limitation, in the combination as currently claimed, that the time when the product indication signal is generated and the time when the laser beam detection signal is generated, are measured and stored, and that the generation of an error output signal will be produced if the difference between the time for said product indication signal and the time for said laser beam detection signal

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differs by more than a threshold value. The combined limitations are not found taught or fairly suggested by the prior arts made of record, considered alone or in combination.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin R. Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


HAI PHAM
PRIMARY EXAMINER
May 22, 2003